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MATERIAL SAFETY DATA SHEET

ALVANIA EP LF GREASE 2

MSDS# 017112515

ORDER# 17322 CUSTOMER: TACOMA, WA

HAZARD RATINGS / EMERGENCY (4 = EXTREME)

* HEALTH: SLIGHT (1) * EYES: SLIGHT (1) * ~~HAZARD~~ SHELL 713-241-4619 CHEMTREC
800-424-9300 LILYBLAD PET. DIST. 206-572-4402 ~~HAZARD~~ HYDROCARBON ~~HAZARD~~ 71125 ~~HAZARD~~
MIXTURE

INGREDIENT COMPOSITION

~~HAZARD~~ - ALVANIA EP LF GREASE 2 ~~HAZARD~~ - SEVERELY HYDROTREATED HEAVY NAPHTHENIC DISTILLATE (CAS#: 64742-52-5) ~~HAZARD~~ - SOLVENT REFINED, HYDROTREATED RESIDUAL OIL (CAS#: 64742-57-0) ~~HAZARD~~ - LITHIUM HYDROXY STEARATE (CAS#: 7620-77-1) ~~HAZARD~~ - SULFURIZED LARD OIL (CAS#: 61790-49-6) ~~HAZARD~~ - DIBUTYL CARBAMODITHIOLIC ACID METHYLENE ESTER (CAS#: 110-25-8) ~~HAZARD~~ - ZINC NAPHTHENATE (CAS#: 12001-85-3) ~~HAZARD~~ - MINOR ADDITIVES (CAS: MIXTURE)

HEALTH INFORMATION

ACUTE TOXICITY DATA: SEVERELY HYDROTREATED HEAVY NAPHTHENIC DISTILLATE. CAS#: 64742-52-5: ACUTE ORAL LD50: >5.0 G/KG (RAT); ACUTE DERMAL LD50: >2.0 G/KG (RABBIT); SULFURIZED LARD OIL. CAS#: 61790-49-6: ACUTE ORAL LD50: >16,000 MG/KG (RAT); ACUTE DERMAL LD50: >2,000 MG/KG (RABBIT). THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARDS (29 CFR 1910.1200). EYE CONTACT: LUBRICATING GREASES ARE GENERALLY CONSIDERED NO MORE THAN MINIMALLY IRRITATING TO THE EYES. SKIN CONTACT: LUBRICATING GREASES ARE GENERALLY CONSIDERED NO MORE THAN MILDLY IRRITATING TO THE SKIN. PROLONGED OR REPEATED LIQUID CONTACT CAN RESULT IN DEFATING AND DRYING OF THE SKIN WHICH MAY RESULT IN SKIN IRRITATION AND DERMATITIS. RELEASE DURING HIGH PRESSURE USAGE MAY RESULT IN INJECTION OF GREASE INTO THE SKIN CAUSING LOCAL NECROSIS. INHALATION: NOT EXPECTED TO BE A RELEVANT ROUTE OF EXPOSURE; HOWEVER, UNDER HIGH TEMPERATURE CONDITIONS, VAPORS IRRITATING TO THE NOSE, THROAT AND UPPER RESPIRATORY TRACT MAY BE PRODUCED. INGESTION: LUBRICATING GREASES ARE GENERALLY CONSIDERED NO MORE THAN SLIGHTLY TOXIC IF SWALLOWED. SIGNS AND SYMPTOMS: IRRITATION AS NOTED ABOVE. AGGRAVATED MEDICAL CONDITIONS: PREEXISTING EYE AND SKIN DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT. SUPPLEMENTAL HEALTH INFORMATION: NONE IDENTIFIED.

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL/TWA: NOT ESTABLISHED.

EMERGENCY AND FIRST AID PROCEDURES

INHALATION: REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION. EYE CONTACT: FLUSH EYES WITH WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION. ~~HAZARD~~ CONTACT: REMOVE CONTAMINATED CLOTHING/SHOES AND WIPE EXCESS FROM SKIN. FLUSH SKIN WITH WATER. FOLLOW BY WASHING WITH SOAP AND WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION. DO NOT REUSE CLOTHING UNTIL CLEARED. INGESTION: DO NOT INDUCE VOMITING. IN GENERAL, NO TREATMENT IS NECESSARY UNLESS LARGE QUANTITIES OF PRODUCT ARE INGESTED. HOWEVER, GET MEDICAL ATTENTION. NOTE TO PHYSICIAN: IN GENERAL, EMESIS INDUCTION IS UNNECESSARY IN HIGH VISCOSITY, LOW VOLATILITY PRODUCTS, I.E., MOST OILS AND GREASES.

PHYSICAL DATA

BOILING POINT (DEGREES C): NOT AVAILABLE ~~HAZARD~~ 350.6 (DROPPING POINT) ~~HAZARD~~ SPECIFIC GRAVITY (WATER = 1) ~~HAZARD~~ NOT AVAILABLE ~~HAZARD~~ NEGLIGIBLE ~~HAZARD~~ ~~HAZARD~~ NOT AVAILABLE ~~HAZARD~~ NOT AVAILABLE ~~HAZARD~~ (AT 20 C): NOT AVAILABLE ~~HAZARD~~ DARK TAN TO BROWN SMOOTH GREASE.

FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD USED: 221 DEG. C (PMCC) ~~HAZARD~~ UPPER: N/AV. LOWER: N/AV ~~HAZARD~~ EXTINGUISHING MEDIA: USE WATER FOG, FOAM, DRY CHEMICAL OR CO2. DO NOT USE A DIRECT STREAM OF WATER. PRODUCT WILL FLOAT AND CAN BE REIGNITED ON SURFACE OF WATER. ~~HAZARD~~ MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BURNER GEAR (HELMET WITH FACE SHIELD, BURNER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE HIGH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER. ~~HAZARD~~ HAZARDS: SULFUR OXIDES AND HYDROGEN SULFIDE, BOTH OF WHICH ARE TOXIC, MAY BE RELEASED UPON COMBUSTION.

REACTIVITY

REACTIVITY: STABLE ~~HAZARD~~ WILL NOT OCCUR ~~HAZARD~~ AVOID HEAT, FLAME AND CONTACT WITH STRONG OXIDIZING AGENTS. ~~HAZARD~~ THERMAL DECOMPOSITION PRODUCTS ARE HIGHLY DEPENDENT ON THE COMBUSTION CONDITIONS. A COMPLEX MIXTURE OF AIRBORNE SOLID, LIQUID, PARTICULATES AND GASES WILL EVOLVE WHEN THIS MATERIAL UNDERGOES PYROLYSIS OR COMBUSTION. CARBON MONOXIDE, SULFUR OXIDES AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED UPON COMBUSTION.

EMPLOYEE PROTECTION

~~HAZARD~~ PROTECTION: USE A NIOSH-APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVEREXPOSURE. IN ACCORD WITH

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29 CFR 1910.134. USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS. ~~PROTECTIVE CLOTHING~~ AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WEAR GLOVES AND OTHER CLOTHING AS REQUIRED TO MINIMIZE CONTACT. TEST DATA FROM PUBLISHED LITERATURE AND/OR GLOVE AND CLOTHING MANUFACTURERS INDICATE THE BEST PROTECTION IS PROVIDED BY NITRILE GLOVES.

ENVIRONMENTAL PROTECTION

~~SKIN/DRY CLEAN PROCEDURE~~ MAY BURN ALTHOUGH NOT READILY IGNITABLE. USE CAUTIOUS JUDGMENT WHEN CLEANING UP LARGE SPILLS. *** LARGE SPILLS *** WEAR RESPIRATOR AND PROTECTIVE CLOTHING AS APPROPRIATE. SHUT OFF SOURCE OF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; DISPOSE OF PROPERLY. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE. *** SMALL SPILLS *** TAKE UP WITH AN ABSORBENT MATERIAL AND DISPOSE OF PROPERLY. ~~RESIDUE~~ DISPOSE OF PROPERLY.

SPECIAL PRECAUTIONS

MINIMIZE SKIN CONTACT. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, APPLYING COSMETICS, OR USING TOILET FACILITIES. LAUNDRY CONTAMINATED CLOTHING BEFORE REUSE. CONTAMINATED LEATHER ARTICLES INCLUDING SHOES CANNOT BE DECONTAMINATED AND SHOULD BE DESTROYED TO PREVENT REUSE.

TRANSPORTATION REQUIREMENTS

~~DOT CLASSIFICATION~~ NOT HAZARDOUS BY D.O.T. REGULATIONS ~~DOT HAZARD CLASSIFICATION~~ NONE.

OTHER REGULATORY CONTROLS

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES. IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE SDS SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS. STATE REGULATORY INFORMATION: BASED ON INFORMATION AVAILABLE TO SHELL, THIS PRODUCT DOES NOT CONTAIN ANY CHEMICAL SUBSTANCE LISTED ON A CHEMICAL SPECIFIC STATE LIST. THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN. BE SAFE - READ OUR PRODUCT SAFETY INFORMATION...AND PASS IT ON (PRODUCT LIABILITY LAW REQUIRES IT). SHELL OIL COMPANY PRODUCT SAFETY AND COMPLIANCE P. O. BOX 4320 HOUSTON, TX 77210 DATE PREPARED: JULY 1, 1991 LILYBLAD PETROLEUM, INC., 2244 PORT OF TACOMA RD., TACOMA, WA 98421 SKY

STABILITY: STABLE. HAZARDOUS REACTIONS WILL NOT OCCUR UNDER NORMAL USE. AVOID HEAT, OPEN FLAMES, AND OXIDIZING MATERIALS. HAZARDOUS DECOMPOSITION PRODUCTS: THERMAL DECOMPOSITION PRODUCTS ARE HIGHLY DEPENDENT ON THE COMBUSTION CONDITIONS. A COMPLEX MIXTURE OF AIRBORNE SOLID, LIQUID, PARTICULATES

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MATERIAL SAFETY DATA SHEET

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MSDS# 016370201

ORDER# 17322 CUSTOMER: TACOMA, WA

AND GASES WILL EVOLVE WHEN THIS MATERIAL UNDERGOES PYROLYSIS OR COMBUSTION. CARBON MONOXIDE AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED UPON COMBUSTION.

EMPLOYEE PROTECTION

~~RESPIRATORY PROTECTION~~ IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. 4) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS AND PARTICULATES. ~~PROTECTIVE CLOTHING~~ WEAR CHEMICAL-RESISTANT GLOVES AND OTHER PROTECTIVE CLOTHING AS REQUIRED TO MINIMIZE SKIN CONTACT. NO SPECIAL EYE PROTECTION IS ROUTINELY NECESSARY. TEST DATA FROM PUBLISHED LITERATURE AND/OR GLOVE AND CLOTHING MANUFACTURERS INDICATE THE BEST PROTECTION IS PROVIDED BY NITRILE GLOVES.

ENVIRONMENTAL PROTECTION

~~SHELL OIL LEAK PROCEDURES~~ MAY BURN ALTHOUGH NOT READILY IGNITABLE. USE CAUTIOUS JUDGMENT WHEN CLEANING UP LARGE SPILLS. *** LARGE SPILLS *** WEAR RESPIRATOR AND PROTECTIVE CLOTHING AS APPROPRIATE. SHUT OFF SOURCE OF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; DISPOSE OF PROPERLY. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE. SMALL SPILLS: TAKE UP WITH AN ABSORBENT MATERIAL AND DISPOSE OF PROPERLY. ~~HAZARDOUS WASTE~~ PLACE IN AN APPROPRIATE DISPOSAL FACILITY IN COMPLIANCE WITH LOCAL REGULATIONS. ~~ENVIRONMENTAL HAZARD~~ THIS PRODUCT IS CLASSIFIED AS AN OIL UNDER SEC. 311 OF THE CLEAN WATER ACT. SPILLS ENTERING (A) SURFACE WATERS OR (B) ANY WATER COURSES OR SEWERS ENTERING/LEADING TO SURFACE WATERS THAT CAUSE A SHEEN MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER. 800-424-8802.

SPECIAL PRECAUTIONS

MINIMIZE SKIN CONTACT. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES. LAUNDRY CONTAMINATED CLOTHING BEFORE REUSE. PROPERLY DISPOSE OF CONTAMINATED LEATHER ARTICLES, INCLUDING SHOES, THAT CANNOT BE DECONTAMINATED.

TRANSPORTATION REQUIREMENTS

~~DOT CLASSIFICATION~~ NOT HAZARDOUS BY D.O.T. REGULATIONS ~~SEE REQUIREMENTS~~ FOR BARGE SHIPMENTS: USE CARGO INFORMATION CARD SCM 68701, DIALA OIL.

OTHER REGULATORY CONTROLS

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES. IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE EDS SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS. STATE REGULATORY INFORMATION: THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES: OTHER PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS, YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE. STATE LISTED COMPONENT: SEVERELY HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (CAS# 64742-53-6); PERCENT: 60-70; STATE CODE: MA, MA - MASSACHUSETTS SUBST. LIST. VOLATILE ORGANIC COMPOUNDS (VOC): THIS PRODUCT IS EXEMPT FROM VOC REPORTING UNDER THE CALIFORNIA CLEAN AIR ACT. SECTION 94510 EXEMPTS ORGANIC COMPOUNDS THAT EITHER HAVE A VAPOR PRESSURE OF <0.1 MM HG @ 20 DEG. C OR HAVE MORE THAN 12 CARBON ATOMS. THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN. BE SAFE. READ OUR PRODUCT SAFETY INFORMATION...AND PASS IT ON (PRODUCT LIABILITY LAW REQUIRES IT) SHELL OIL COMPANY PRODUCT SAFETY AND COMPLIANCE P. O. BOX 4320 HOUSTON, TX 77210 DATE PREPARED: FEBRUARY 23, 1993 LILYBLAD PETROLEUM, INC., 2244 PORT OF TACOMA RD., TACOMA, WA 98421 SKF

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